

CLAIMS

1. A gas chromatograph comprising:

a gas separation column accommodating a member for causing a flow delay
5 depending on gas component;

an air pump for supplying an air as a carrier gas into said gas separation
column;

a gas supply port formed in a gas flow channel extending between said air
pump and said gas separation column, and adapted to supply a subject gas
10 containing a target gas component to be detected into the carrier gas flowing in
said gas flow channel;

a buffer tank provided upstream of said gas supply port, and having the
capability of retaining a larger amount of the carrier gas than the amount of the
carrier gas supplied per unit of time into said gas separation column by said air
15 pump; and

a detector for detecting the gas component of said subject gas supplied to said
gas separation column.

20 2. The gas chromatograph as set forth in claim 1 further comprising a sensor
for sensing a timing of injecting said subject gas into said gas flow channel, and
analysis means for analyzing said subject gas according to the timing provided
from said sensor and an output of said detector.

25 3. The gas chromatograph as set forth in claim 1, wherein said buffer tank has
an end opened to outside, and the other end connected to said air pump, and a
part of said carrier gas supplied to said gas flow channel by said air pump is
sent to said gas separation column, and the rest of said carrier gas is returned
30 from said gas flow channel to said buffer tank through a branch channel.

4. The gas chromatograph as set forth in claim 1 further comprising a gas purifier using at least one of a gas decomposition catalyst and a gas absorption material, which is disposed upstream of said gas supply port in said gas flow channel.

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5. The gas chromatograph as set forth in claim 1, further comprising a flow sensor disposed upstream of said gas supply port and at the vicinity of said gas supply port in said gas flow channel, and means for detecting a supply of said subject gas according to a change in output of said flow sensor.

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6. The gas chromatograph as set forth in claim 1 further comprising a flow sensor disposed downstream of said detector and at the vicinity of said detector in said gas flow channel, and means for detecting a supply of said subject gas according to a change in output of said flow sensor.

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7. The gas chromatograph as set forth in claim 1, further comprising a controller for increasing a flow amount of said carrier gas supplied into said gas separation column according to a predetermined pattern from the time point of supplying said subject gas.

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8. A breath component analyzer comprising:
the gas chromatograph as set forth in claim 1;
a memory for storing reference data including a retention time previously determined by the gas chromatograph with respect to a breath odor sample having a known gas component; and
analysis means for comparing measurement data including a retention time

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determined by the gas chromatograph with respect to a breath odor to be measured with the reference data.

- 5 9. The breath component analyzer as set forth in claim 8 comprising means of correcting a fluctuation amount of the retention time of the gas component corresponding to the breath odor to be detected according to the fluctuation amount of the retention time of a constant component in breath.

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10. A gas chromatograph comprising:

a gas separation column accommodating a member for causing a flow delay depending on gas component;

a bag-type tank, which is of a variable volume to retain said carrier gas therein,

- 15 and has a connection port connected to an end of said gas separation column through a gas flow channel;

an air suction pump provided at the other end of said gas separation column;

a gas supply port formed between said gas separation column and said bag-type tank to supply a subject gas including a target gas component to be
20 detected into said carrier gas flowing in said gas flow channel; and

a detector for detecting the gas component of said subject gas supplied to said gas separation column.

- 25 11. A breath component analyzer comprising:

the gas chromatograph as set forth in claim 10;

a memory for storing reference data including a retention time previously determined by the gas chromatograph with respect to a breath odor sample having a known gas component; and

- 30 analysis means for comparing measurement data including a retention time

determined by the gas chromatograph with respect to a breath odor to be measured with the reference data.

- 5 12. The breath component analyzer as set forth in claim 11 comprising means of correcting a fluctuation amount of the retention time of the gas component corresponding to the breath odor to be detected according to the fluctuation amount of the retention time of a constant component in breath.